

IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Ray A. Walker

Confirmation No.: 9903

Application No.: 10/044,476

Examiner: Leonard S. Liang

Filing Date: Jan. 12, 2002

Group Art Unit: 2853

Title: METHOD AND APPARATUS FOR TRANSFERRING INFORMATION BETWEEN A PRINTER  
PORTION AND A REPLACEABLE PRINTING COMPONENT

Mail Stop Appeal Brief-Patents  
Commissioner For Patents  
PO Box 1450  
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed  
on Oct. 27, 2004.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$340.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

( ) (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d)  
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( ) one month	\$110.00
( ) two months	\$430.00
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( ) four months	\$1530.00

( ) The extension fee has already been filled in this application.

( ) (b) Applicant believes that no extension of time is required. However, this conditional petition is  
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Please charge to Deposit Account **08-2025** the sum of \$340.00. At any time during the  
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Respectfully submitted,

Ray A. Walker

By Matthew B. McNutt

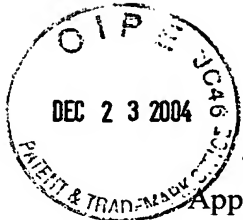
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appellant: Ray A. Walker Examiner: Leonard S. Liang  
Serial No.: 10/044,476 Group Art Unit: 2853  
Filed: Jan. 10, 2002 Docket No.: 10019374-1  
Title: METHOD AND APPARATUS FOR TRANSFERRING INFORMATION  
BETWEEN A PRINTER PORTION AND A REPLACEABLE PRINTING  
COMPONENT

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**APPEAL BRIEF TO THE BOARD OF  
PATENT APPEALS AND INTERFERENCES OF THE  
UNITED STATES PATENT AND TRADEMARK OFFICE**

**Mail Stop Appeal Brief-Patents**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

**Appeal Brief**

This brief is presented in support of the Notice of Appeal filed on October 27, 2004, from the final rejection dated June 29, 2004, and the Advisory Action dated September 10, 2004, of the Examiner rejecting claims 1-21 of the above identified application. Claims 1-21 remain for consideration.

The U.S. Patent and Trademark Office is hereby authorized the Charge Deposit Account No. 08-2025 in the amount of \$340.00 for filing a Brief in Support of an Appeal as set forth under 37 C.F.R. 1.17(c), however, at any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account 08-2025 pursuant to 37 C.F.R. 1.25. Additionally, please charge any fees to Deposit Account 08-2025 under 37 C.F.R. 1.16, 1.17, 1.19, 1.20 and 1.21. Appellant respectfully requests reversal of the Examiner's rejection of pending claims 1-21.

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**Appeal Brief to the Board of Patent Appeals and Interferences  
of the United States Patent and Trademark Office**

Appellant: Ray A. Walker

Serial No.: 10/044,476

Filed: Jan. 10, 2002

Docket No.: 10019374-1

Title: METHOD AND APPARATUS FOR TRANSFERRING INFORMATION BETWEEN A PRINTER  
PORTION AND A REPLACEABLE PRINTING COMPONENT

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**Appeal Brief to the Board of Patent Appeals and Interferences  
of the United States Patent and Trademark Office**

Appellant: Ray A. Walker

Serial No.: 10/044,476

Filed: Jan. 10, 2002

Docket No.: 10019374-1

Title: METHOD AND APPARATUS FOR TRANSFERRING INFORMATION BETWEEN A PRINTER  
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**Real Party in Interest**

The real party in interest is Hewlett-Packard Development Company, LP.

**Related Appeals and Interferences**

There are no other prior and pending appeals, interferences or judicial proceedings which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this Appeal.

**Status of Claims**

Claims 1-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,302,527 to Walker in view of U.S. Patent No. 6,239,879 to Hay. No claims have been allowed. Claims 1-21 are appealed herein.

**Status of Amendments**

No amendments have been entered subsequent to the Final Office Action mailed June 29, 2004. The claims listed in the Claims Appendix reflect the claims as of June 29, 2004. A Response After Final was filed on August 17, 2004, but no amendments to the claims were proposed by Appellants or entered by the Examiner.

**Summary of Claimed Subject Matter**

The Summary is set forth as an exemplary embodiment as the language corresponding to independent claims 1, 7, 13 and 19. Discussions about elements of 1, 7, 13 and 19 can be found at least at the cited locations in the specification and drawings.

The present invention, as claimed in independent claim 1, provides an ink level sensing system for determining ink level in an ink reservoir and providing this ink level information to a printing system. The ink level sensing system comprises an ink reservoir having an interior space for containing ink. The ink reservoir has a radio frequency interface disposed within the interior space of the ink reservoir. A printing device is configured for receiving the ink reservoir. The printing device includes a radio frequency interface for

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receiving ink level information that is coupled through the ink reservoir by the radio frequency interface within the interior space of the ink reservoir. See page 5, line 9 through page 7, line 10; page 9, line 10 through page 10, line 29; page 12, line 28, through page 13, line 2; and Figures 2 and 5, reference numbers 10-66. See also Figures 1, 3 and 4.

The present invention, as claimed in independent claim 7, provides a replaceable printing component for use in a printing system. The replaceable printing component is for containing a supply of print material for use by the printing system to form images on media. The replaceable printing component comprises a reservoir having an interior space for containing printing material. A wireless linking device is disposed entirely within the interior space of the reservoir for emitting a signal indicative of printing material within the interior space of the reservoir. The reservoir is formed of a material so that the emitted signal passes through the reservoir for providing information to the printing system. See page 5, line 9 through page 7, line 10; page 9, line 10 through page 10, line 29; page 12, line 28, through page 13, line 2; and Figures 2 and 5, reference numbers 10-66. See also Figures 1, 3 and 4.

The present invention, as claimed in independent claim 13, provides a printing system having a printer portion and at least one replaceable print material reservoir, the printer portion and the at least one replaceable print material reservoir exchanging information therebetween. The printing system comprises a first wireless link associated with the replaceable print material reservoir. The first wireless link is disposed entirely within an interior space for containing print material within the replaceable print material reservoir. A second wireless link is associated with the printer portion. The second wireless link receives replaceable reservoir information from the first wireless link by transmission of information in a wireless manner. See page 5, line 9 through page 7, line 10; page 9, line 10 through page 10, line 29; page 12, line 28, through page 13, line 2; and Figures 2 and 5, reference numbers 10-66. See also Figures 1, 3 and 4.

The present invention, as claimed in independent claim 19, provides a method for transferring status information from an ink reservoir to a printer portion. The method comprises determining status information of the ink reservoir using a sensor disposed within an interior space of the ink reservoir, the interior space of the ink reservoir for containing ink. Status information is transferred using a wireless link from the interior space of the ink

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reservoir through a sidewall of the ink reservoir to the printer portion. See page 5, line 9 through page 7, line 10; page 9, line 10 through page 10, line 29; page 12, line 28, through page 13, line 2; and Figures 2 and 5, reference numbers 10-66. See also Figures 1, 3 and 4.

**Grounds of Rejection to be Reviewed on Appeal**

Claims 1-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,302,527 to Walker in view of U.S. Patent No. 6239879 to Hay.

**Argument**

**I. The rejection of claims 1-21 under 35 U.S.C. 103(a)**

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,302,527 to Walker (“Walker”) in view of U.S. Patent No. 6239879 to Hay (“Hay”). Appellants submit that the Walker reference alone or in combination with the Hay reference fails to disclose, teach, or suggest the invention of independent claims 1, 7, 13 and 19 and the claims depending therefrom.

**A. The rejection of claims 1-6 under 35 U.S.C. § 103(a) as being unpatentable over Walker in view of Hay**

The rejection of claims 1-6 in the Final Office Action mailed June 29, 2004, under 35 U.S.C. § 103(a) as being unpatentable over Walker in view of Hay is not correct and should be withdrawn, because the rejection fails to establish a case of *prima facie* obviousness.

Referring to Section 706.02 (j) of the MPEP, to establish a *prima facie* case of obviousness, three basic criteria must be met:

- (1) There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference to combine reference teachings;
- (2) There must be reasonable expectation of success;
- (3) The prior art reference (or references when combined) must teach or suggest all the claim limitations.

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Title: METHOD AND APPARATUS FOR TRANSFERRING INFORMATION BETWEEN A PRINTER  
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The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on Appellant's disclosure. See *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (F.E.D. Cir. 1991).

**Independent claim 1** recites an ink level sensing system for determining ink level in an ink reservoir and providing this ink level information to a printing system. The ink level sensing system comprises an ink reservoir having an interior space for containing ink. The ink reservoir has a radio frequency interface disposed within the interior space of the ink reservoir. A printing device is configured for receiving the ink reservoir. The printing device includes a radio frequency interface for receiving ink level information that is coupled through the ink reservoir by the radio frequency interface within the interior space of the ink reservoir.

**Walker** discloses a replaceable printing component 14 for use in a printing system 10. The printing system 10 includes a printer portion 12 and one or more replaceable printing components 14 installed therein. Each replaceable printing component 14 is configured for containing a supply of printing material for use by the printing system to form images on print media. Each replaceable printing component 14 includes a linking device 16 for exchanging status information between the replaceable printing component 14 and a corresponding linking device associated with the printer portion 12. (See column 2, line 66 through column 3, line 10). The linking device 16 includes a sensor 42 for determining status information related to the replaceable printing component 14, and a link 44 for transferring information between the replaceable printing component 14 and the printer portion 12. (See column 4, line 33-39 and Figure 3). The sensor 42 is electrically connected to the link 44. (See column 4, lines 44-61 and Figure 4). The sensor 42 and link 44 of linking device 16 are positioned on the ink reservoir 24 of the replaceable printing component 14. (See column 4, line 66 through column 5, line 49, and Figures 5-7). The link 44 includes a radio frequency interface 80 and an antenna 82 that emits a broadcast signal that is indicative of the sensor output. The printer portion 12 receives the broadcast signal with an associated linking device 70 having a radio frequency interface 74 and an antenna 76. (See column 5, line 50 through column 8, line 6, and Figures 8 and 9).

Hay discloses contactless power and communication links between a printer engine and a peripheral device installed on or within a replaceable printer component. Peripheral devices include sensors, such as toner quality sensors. (See column 2, lines 27-34, and column 3, lines 46-67). Bidirectional communications between a printer engine and a peripheral device onboard a replaceable printer component is achieved using a pair of inductively-coupled coils 60, 61. Coil 61 is mounted on the printer engine 10, while coil 62 is mounted on the removable component 20. Coils 61 and 62 are positioned such that when the removable printer component 20 is installed in the printer engine 10, coils 61 and 62 are located face to face in parallel planes, axially aligned, and as physically close together as practicable. (See col. 5, line 32-43, and Figure 7).

The Examiner has conceded that Walker does not disclose that **the radio frequency interface is disposed within the interior space of the ink reservoir**. (Final Office Action, pg. 9). The examiner submits that this limitation is taught or suggested by Hay.

Hay also does not disclose a **radio frequency interface is disposed within the interior space of the ink reservoir**, as claimed by Appellants. First, Hay only refers to “communication links” and fails entirely to teach or suggest a **radio frequency interface**, as claimed by Appellants. As clearly shown and described in the present application, radio frequency interface 58 is a component of linking device 34, but is not the same as linking device 34. Because Hay does not teach a radio frequency interface as claimed in the present application, the reference also cannot teach or suggest a **radio frequency interface disposed within the interior space of the ink reservoir**.

Second, even if the “communication link” of Hay was considered equivalent to the claimed radio frequency interface, Hay does not teach or suggest a communication link **disposed within the interior space of the ink reservoir**. Hay distinguishes between “peripheral devices” (e.g., sensors) and “communication links”, and only suggests that peripheral devices may be installed within the replaceable component. Hay does not teach or suggest that a communication link (e.g., a radio frequency interface) for the peripheral device may also be installed within the replaceable component. When referring to peripheral devices, Hay specifically teaches that the peripheral device is installed “on or within” the replaceable component. However, when referring to communication links,



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Hay specifically teaches that the link is mounted “on” the replaceable component; the possibility of mounting the communication link “within” the replaceable component is notably and conspicuously absent. (See, for example, column 4, lines 14-16, stating “Coil 31 is mounted on the printer engine 10, while the other coil 32 is mounted on the removable component”; and column 5, lines 36-38, stating “Coil 61 is mounted on the printer engine 10, while coil 62 is mounted on the removable component.”).

A full and complete reading of Hay teaches that a “peripheral device” such as a toner quantity sensor may be “in” the replaceable component. However, Hay clearly teaches the communication link is “on” the replaceable component. In this regard, Hay offers nothing more than Walker. Accordingly, contrary to the Examiner’s assertions, a person of ordinary skill in the art would find no motivation in Hay to position a **radio frequency interface within the interior space of the ink reservoir**, as claimed in the present application.

In view of the above, Applicants respectfully submit that the above rejection of independent claim 1 under 35 U.S.C. 103(a) should be withdrawn.

Dependent claims 2-6 depend directly or indirectly upon corresponding independent claim 1. Accordingly, dependent claims 2-6 are also allowable over the art of record.

**B. The rejection of claims 7-21 under 35 U.S.C. § 103(a) as being unpatentable over Walker in view of Hay**

The rejection of claims 7-21 in the Final Office Action mailed June 29, 2004, under 35 U.S.C. § 103(a) as being unpatentable over Walker in view of Hay is not correct and should be withdrawn, because the rejection fails to establish a case of *prima facie* obviousness.

Referring to Section 706.02 (j) of the MPEP, to establish a *prima facie* case of obviousness, three basic criteria must be met:

- (1) There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference to combine reference teachings;
- (2) There must be reasonable expectation of success;
- (3) The prior art reference (or references when combined) must teach or suggest all the claim limitations.

**Appeal Brief to the Board of Patent Appeals and Interferences  
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Appellant: Ray A. Walker

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Title: METHOD AND APPARATUS FOR TRANSFERRING INFORMATION BETWEEN A PRINTER  
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The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on Appellant's disclosure. See *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (F.E.D. Cir. 1991).

**Independent claim 7** recites a replaceable printing component for use in a printing system. The replaceable printing component is for containing a supply of print material for use by the printing system to form images on media. The replaceable printing component comprises a reservoir having an interior space for containing printing material. A wireless linking device is disposed entirely within the interior space of the reservoir for emitting a signal indicative of printing material within the interior space of the reservoir. The reservoir is formed of a material so that the emitted signal passes through the reservoir for providing information to the printing system.

**Walker** is as discussed above under Section IA.

**Hay** is as discussed above under Section IA.

The Examiner has conceded that Walker does not disclose that **the radio frequency interface is disposed within the interior space of the ink reservoir**. (Final Office Action, pg. 9). Because the radio frequency interface 80 of Walker is a component of link 44 (See Figure 9), it follows that Walker also fails to disclose **a wireless linking device disposed entirely within the interior space of the reservoir**.

Hay also does not teach or suggest **a wireless linking device is disposed entirely within the interior space of the reservoir**. Hay distinguishes between “peripheral devices” (e.g., sensors) and “communication links”, and only suggests that peripheral devices may be installed within the replaceable component. Hay does not teach or suggest that a communication link for the peripheral device may also be installed within the replaceable component. When referring to peripheral devices, Hay specifically teaches that the peripheral device is installed “on or within” the replaceable component. However, when referring to communication links, Hay specifically teaches that the link is mounted “on” the replaceable component; the possibility of mounting the communication link “within” the replaceable component is notably and conspicuously absent. (See, for example, column 4, lines 14-16, stating “Coil 31 is mounted on the printer engine 10, while the other coil 32 is mounted on the removable component”; and column 5, lines 36-38, stating “Coil 61

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A full and complete reading of Hay teaches that a “peripheral device” such as a toner quantity sensor may be “in” the replaceable component. However, Hay clearly teaches the communication link is “on” the replaceable component. In this regard, Hay offers nothing more than Walker. Accordingly, contrary to the Examiner’s assertions, a person of ordinary skill in the art would find no motivation in Hay to position **a wireless linking device is disposed entirely within the interior space of the reservoir**, as claimed in the present application.

In view of the above, Applicants respectfully submit that the above rejection of independent claim 7 under 35 U.S.C. 103(a) should be withdrawn.

Independent claims 13 and 19 are grouped with independent claim 7, and also believed to be allowable over the art of record. Dependent claims 8-12, 14-18, 20 and 21 depend directly or indirectly upon corresponding independent claims 7, 13 and 19. Accordingly, dependent claims 8-12, 14-18, 20 and 21 are also allowable over the art of record.

**Conclusion**

For above reasons, Appellants respectfully submit that the cited art neither anticipates nor renders the claimed invention obvious, and therefore the claimed invention does patentably distinguish over the cited art. Therefore, Appellants respectfully submit that the rejections to pending claims 1-21 are in error. Thus, Appellants respectfully request that the Board reverse the Examiner and find all pending claims allowable.

**Appeal Brief to the Board of Patent Appeals and Interferences  
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Any inquiry regarding this Appeal Brief to the Board of Patent Appeals and Interferences of the United States Patent and Trademark Office should be directed to either Matthew B. McNutt at Telephone No. (512) 231-0531, Facsimile No. (512) 231-0540 or Thomas A. Jolly at Telephone No. (541) 715-7331, Facsimile No. (541) 715-8581. In addition, all correspondence should continue to be directed to the following address:

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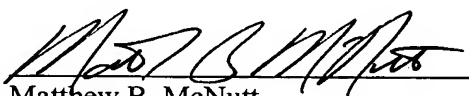
Respectfully submitted,

Ray A. Walker,

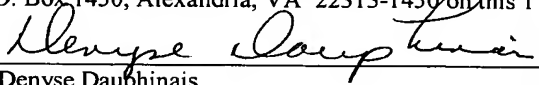
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**CERTIFICATE UNDER 37 C.F.R. 1.8:** The undersigned hereby certifies that this paper or papers, as described herein, are being deposited in the United States Postal Service, as first class mail, in an envelope address to: Mail Stop Appeal Brief-Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 17th day of December, 2004.

By   
Name: Denyse Dauphinais

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**CLAIMS APPENDIX**

**Listing of Claims**

1. (Previously presented) An ink level sensing system for determining ink level in an ink reservoir and providing this ink level information to a printing system, the ink level sensing system comprising:  
an ink reservoir having an interior space for containing ink, the ink reservoir having a radio frequency interface disposed within the interior space of the ink reservoir; and  
a printing device configured for receiving the ink reservoir, the printing device including a radio frequency interface for receiving ink level information that is coupled through the ink reservoir by the radio frequency interface within the interior space of the ink reservoir.
2. (Previously presented) The ink level sensing system of claim 1 further including a sensor electrically connected to the radio frequency interface disposed within the interior space of the ink reservoir, the sensor providing a sensor output signal indicative of ink level within the interior space of the ink reservoir to the radio frequency interface.
3. (Previously presented) The ink level sensing system of claim 1 wherein the ink reservoir includes a sidewall and wherein the radio frequency interface includes an antenna for coupling a radio frequency signal through the sidewall to the printing system.
4. (Previously presented) The ink level sensing system of claim 1 wherein the radio frequency interface within the interior space of the ink reservoir is enclosed in an encapsulant material and wherein the encapsulant material is at least partially surrounded by ink within the interior of the ink reservoir.
5. (Previously presented) The ink level sensing system of claim 2 wherein the sensor is a pair of electrodes disposed within the interior space of the ink reservoir to measure electrical continuity through ink within the interior space of the ink reservoir.

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6. (Previously presented) The ink level sensing system of claim 2 wherein the sensor is a pair of electrodes disposed within the interior space of the ink reservoir to measure electrical capacitance between the pair of electrodes.
7. (Previously presented) A replaceable printing component for use in a printing system, the replaceable printing component for containing a supply of print material for use by the printing system to form images on media, the replaceable printing component comprising:
  - a reservoir having an interior space for containing printing material; and
  - a wireless linking device disposed entirely within the interior space of the reservoir for emitting a signal indicative of printing material within the interior space of the reservoir wherein the reservoir is formed of a material so that the emitted signal passes through the reservoir for providing information to the printing system.
8. (Previously presented) The replaceable printing component of claim 7 wherein the wireless linking device is a radio frequency linking device for providing a radio frequency signal.
9. (Previously presented) The replaceable printing component of claim 7 wherein the replaceable printing component is a replaceable ink reservoir and wherein the wireless linking device includes a sensor that provides an output signal indicative of ink within the interior space of the ink reservoir and wherein the output signal is coupled to the printing system by the wireless linking device.
10. (Previously presented) The replaceable printing component of claim 7 wherein the replaceable printing component is a replaceable ink reservoir and wherein the wireless linking device includes a sensor having a pair of electrodes disposed within the interior space of the ink reservoir to measure electrical continuity through ink within the interior space of the ink reservoir.

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11. (Previously Presented) The replaceable printing component of claim 7 wherein the replaceable printing component is a replaceable ink reservoir and wherein the wireless linking device includes a sensor having a pair of electrodes that are disposed within the interior space of the ink reservoir to measure capacitance between the pair of electrodes.
12. (Previously Presented) The replaceable printing component of claim 7 wherein the reservoir does not contain electrical conductors that extend from within the interior space of the reservoir to a location outside the reservoir.
13. (Previously presented) A printing system having a printer portion and at least one replaceable print material reservoir, the printer portion and the at least one replaceable print material reservoir exchanging information therebetween, the printing system comprising:  
a first wireless link associated with the replaceable print material reservoir, the first wireless link disposed entirely within an interior space for containing print material within the replaceable print material reservoir; and  
a second wireless link associated with the printer portion, the second wireless link receiving replaceable reservoir information from the first wireless link by transmission of information in a wireless manner.
14. (Original) The printing system of claim 13 wherein the first wireless link is a radio frequency transmitter for transmitting a radio frequency signal and the second wireless link is a radio frequency receiver for receiving the radio frequency signal and determining the replaceable reservoir information based thereon.
15. (Previously presented) The printing system of claim 13 wherein the replaceable print material reservoir is a replaceable ink reservoir and wherein the replaceable reservoir information is ink level information for the replaceable ink reservoir.
16. (Previously presented) The printing system of claim 13 wherein the first wireless link includes a pair of electrodes disposed within the interior space of the replaceable print

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Appellant: Ray A. Walker

Serial No.: 10/044,476

Filed: Jan. 10, 2002

Docket No.: 10019374-1

Title: METHOD AND APPARATUS FOR TRANSFERRING INFORMATION BETWEEN A PRINTER  
PORTION AND A REPLACEABLE PRINTING COMPONENT

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material reservoir to measure electrical continuity of ink within the replaceable print material reservoir.

17. (Previously presented) The printing system of claim 13 wherein the first wireless link includes a pair of electrodes disposed within the interior space of the replaceable print material reservoir to measure capacitance between the pair of electrodes.

18. (Previously presented) The printing system of claim 13 where the printer portion is an ink jet printer and wherein the replaceable print material reservoir contains ink.

19. (Previously presented) A method for transferring status information from an ink reservoir to a printer portion, the method comprising:

determining status information of the ink reservoir using a sensor disposed within an interior space of the ink reservoir, the interior space of the ink reservoir for containing ink;  
and

transferring status information using a wireless link from the interior space of the ink reservoir through a sidewall of the ink reservoir to the printer portion.

20. (Previously presented) The method of claim 19 wherein the printer portion is an ink jet printer and wherein the status information is ink level information in the ink reservoir.

21. (Previously presented) The method of claim 19 wherein the transferring status information is accomplished by providing a radio frequency signal that couples through a sidewall of the ink reservoir.